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reason why estimated last places should be in units as small as possible.[1]

2. The "mechanical disadvantage" to which I referred is involved in the fact that in your type of machine you depend upon perfect straightness of the main slides. If you use a *reseau* the slides may be practically as bad as they like.

3. The fact of uniformity of coefficient of expansion is a strong argument for glass over metal, but does not affect the question *Reseau or not,* as far as I can see.

4. The *reseau* does not reproduce itself exactly, but the so-called "errors of projection" are pretty constant. This means that you must study the division errors of the copies—and study so many that the distortion of the film in each goes out in the mean. This of course is tiresome. But after all, the projection errors are not so large as the residual distortions of the gelatine you are prepared to admit. And as they are more nearly constant, and thus unimportant in much refined work such as stellar parallax, where absolute places are unimportant, I think the advantage still lies with the reseau.

5. . . . Optical distortion of the microscope does not come in if you work with a suitable objective of the first class. . . . A more frequent source of error in good machines is tilt of the scale in the eye-piece! But that is fortunately eliminated on reversal. . . .

LECTURES AT BERKELEY.

The following course of lectures was given this term by members of the Lick Observatory staff before the class in Modern Astronomy at the University of California:—

Professor R. H. TUCKER—Tuesday, March 24th, and Thursday, March 26th. Subject, "Meridian Circle Work."

Professor R. G. AITKEN—Tuesday, March 31st; subject, "The Rings of *Saturn.*" Thursday, April 2d; subject, "On Double Stars."

Professor C. D. PERRINE—Tuesday, April 14th, and Thursday, April 16th. Subject, "The Lick Observatory Crocker Eclipse Expedition to Flint Island to Observe the Solar Eclipse of January 3, 1908." A. O. LEUSCHNER.

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[1] With the Stackpole machine the probable error of a position, for a good object, does not exceed 0.00004 inch. Our experience with this machine has shown that we can make the settings on good star images with greater accuracy than we can read the scales. It was for this reason that I suggested, in my letter, that the interval between scale divisions should be 0.01 mm instead of 0.025 mm. This would increase the accuracy of reading the scales two and a half times, which, for present purposes at least, would be entirely ample. This also conserves the point, upon which we lay considerable stress, of making all our readings at the same point and very close to the optical axis of the microscope.—S. A.